

Amendment to the Claims:

This listing of claims replaces all prior versions, and listings, of claims in the application:

Claims 1-3 (canceled)

Claim 4 (currently amended): ~~A constellation as in claim 3,~~
~~further comprising a~~ A satellite system, comprising:

a plurality of satellites in inclined elliptical orbits, each said satellite communicating with a portion of the Earth, at least a first group of said satellites being in common orbits having the same, first, repeating ground track, and a second group of said satellites being in common orbits having the same, second, repeating ground track, different than said first ground track, each said satellite communicating during only a portion of the elliptical orbit closest to apogee;

wherein each of said first and second ground tracks define active portions closest to apogee that follow populated portions on the earth; and

a third group of said satellites being in common orbits having the same, third ground track, different than said first and second ground tracks.

Claim 5 (original): A constellation as in claim 4, wherein said first and second ground tracks are in the Northern Hemisphere, and said third ground track is in the Southern Hemisphere.

Claim 6 (original): A communication system, comprising:
a plurality of ground stations, each including communication equipment for communicating with a satellite in orbit; and

a plurality of satellites in respective orbits, said respective orbits including a first sub-constellation orbit with a plurality of satellites therein, each of said plurality of satellites following a repeating ground track that repeats an integral number of times each day and each repeating ground track optimized for covering more than one specific land mass on the earth, including a first sub-constellation optimized for covering first land masses in the Northern Hemisphere, a second sub-constellation optimized for covering second land masses in the Northern Hemisphere, and a third sub-constellation optimized for covering third land masses in the Southern Hemisphere.

Claim 7 (original): A constellation as in claim 6 wherein each of said sub-constellations has 5 satellites therein.

Claims 8-10 (canceled)

Claim 11 (original): A communication system, comprising:
a plurality of ground stations on respective land masses;
and

a plurality of satellites in elliptical orbits, said
plurality of satellites being in orbits in sub-constellations,
each sub-constellation having a plurality of satellites and
repeating ground tracks, which repeating ground tracks are each
optimized to follow a plurality of said land masses, each
satellite operating only during a predetermined percentage of
its orbit closest to its apogee, where two of said sub-
constellations cover land masses in the Northern Hemisphere and
a third sub-constellation covers land masses in the Southern
Hemisphere.

Claim 12 (original): A constellation as in claim 11 wherein
a first sub-constellation has ground tracks covering with
apogees covering Alaska, Western United States, Western Canada,
Western Europe, West Africa, China and India, a second sub-
constellation has ground tracks covering with apogees covering
Eastern United States, Canada, Central America, Eastern Europe,

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Africa, India and China, and the third sub-constellations with apogees covering South America, South Africa, Australia and New Zealand.

Claim 13 (original): A constellation as in claim 12 wherein said satellites transmit only during 60 percent of their orbit.

Claim 14 (original): A constellation as in claim 11 wherein said satellites are in 8 hour orbits and communicate for 2.4 hours on either side of their apogees.

Claim 15 (original): A constellation as in claim 11 wherein said satellites are approximately $3/4$ of the height necessary for geosynchronous orbit or less.

Claims 16-23 (canceled)